

KENT COUNTY ROAD COMMISSION

Safety Edge Projects



What is a Safety Edge?

- A simple & effective solution that can help save lives by allowing drivers who drift off pavements to return to the road safely.
- The Safety Edge shapes the edge of the pavement to approximately 30 degrees.

Pavement Edge Drop-Offs

- A vertical pavement edge can create a "tire scrubbing" condition that may result in over-steering.
- Driver may lose control of the vehicle.
- The resulting crashes tend to be more severe than other crash types.
- A vertical or near vertical drop-off of 2.5 inches or greater has been shown to pose a significant risk.
- Pavements built with the Safety Edge showed reductions of more than 5 percent of total crashes.
- The concept of having an edge that slopes at a 30° angle, rather than a 90°, provides motorists a smooth transition back on to the pavement.

FHWA's Goal

- Accelerate use of the Safety Edge technology
 - “Every Day Counts Initiative”
- Working with States to develop specifications
- Encourage States to adopt as standard practice on all paving projects

3 KCRC Projects

- Bailey Drive —between Vergennes St and Boynton Avenue (2.65 Miles)
- Ada Drive —between Fox Hollow Dr and Thornapple River Dr (1.31 Miles)
- 18 Mile Road— Casnovia to Peach Ridge Ave (1.5 Miles)

Selection Consideration

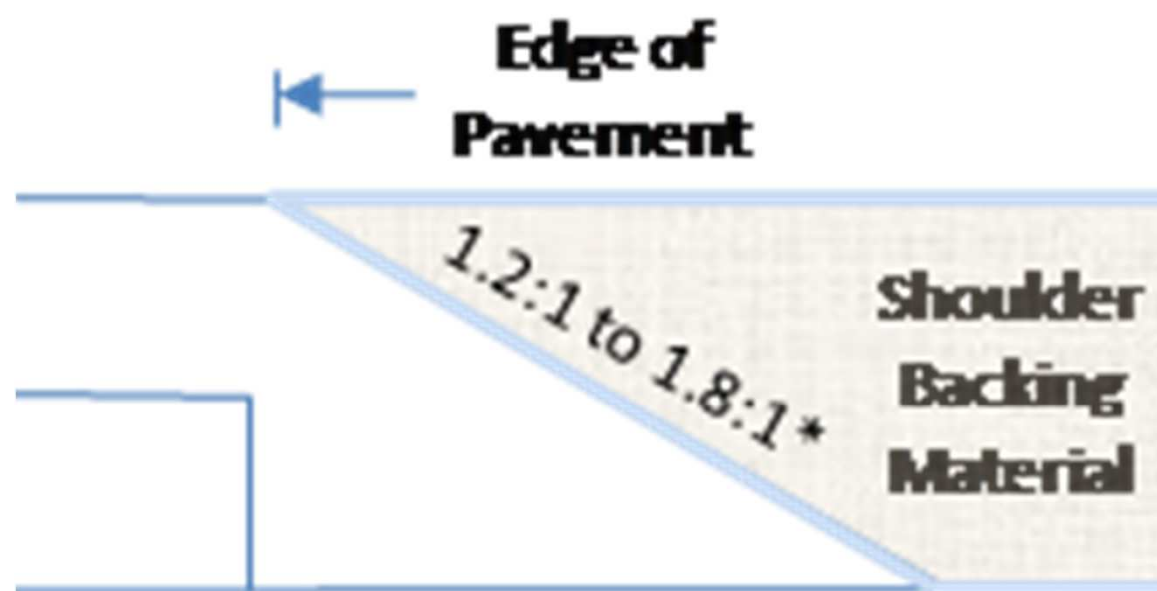
- Bailey Drive – Narrow shoulder and horizontal curves, Local Funds
- Ada Drive – Narrow shoulder with higher volume, Federal Funds
- 18 Mile Road – Narrow shoulder and HMA overlay candidate

BAILEY DRIVE
(Local w/ 2000 ADT)

- Crush & Shape and 2 Course Resurface
- Placed Safety Edge during Top Course

Video.





For $H \leq 5$ in. Configuration 2

How Does It Impact Paving Process

- Using the Safety Edge should not affect the rate of production.
- 1 percent additional asphalt material cost.
- Roller needs to stay off outside edge.

Bailey Drive





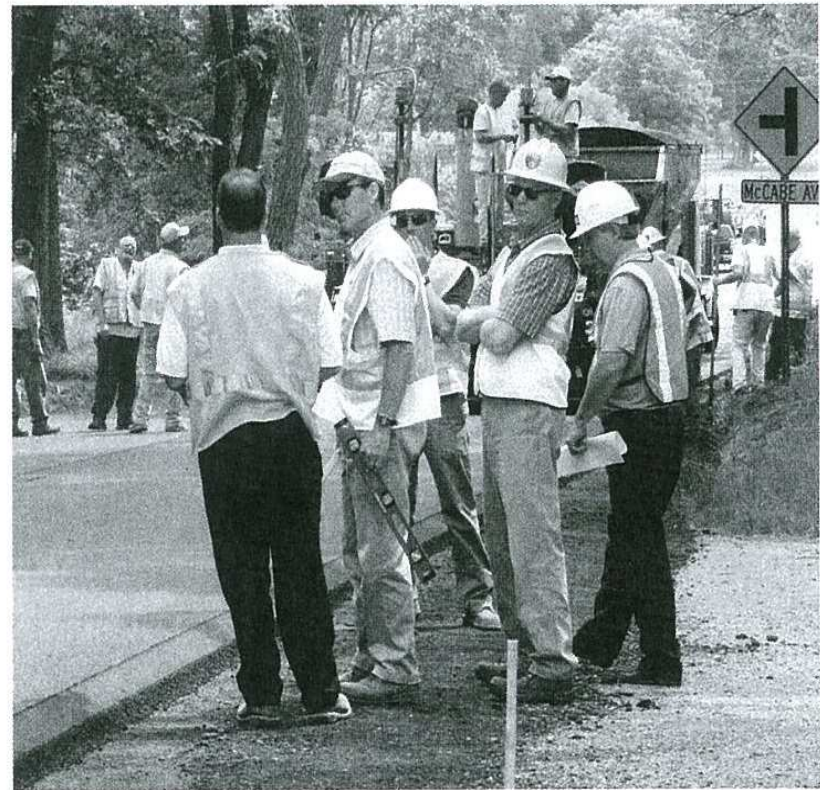
Michigan road agencies get a good look at the Safety EdgeSM

by John Ryyanen, Editor
Center for Technology & Training

A 2.65 mile asphalt paving project on a twisting two-lane road in Ada Township, Michigan in early July generated attention from local, state and federal transportation officials. The occasion was the first use of the Safety EdgeSM paving technique in Michigan. The *Safety Edge* technique, developed jointly by the Georgia Department of Transportation and the Federal Highway Administration (FHWA) based on a research concept, creates a 30 degree taper along a pavement's edge to eliminate dangerous drop-offs. It is not intended to replace regular shoulder maintenance; rather, when shoulder gravel settles or is worn away, the *Safety Edge* provides a gradual and safer transition between the pavement and the shoulder until maintenance can be performed. Local road agencies in Michigan have been hesitant to use this new paving technique because of concerns about reduced durability and the perception that it may be difficult to maintain shoulder gravel on the tapered edge.

First-hand experience

Kent County Road Commission (KCRC) owns the road on which the *Safety Edge* was installed in Ada Township, and they coordinated its installation. Managing Director of KCRC, Jon Rice learned about the *Safety Edge* initiative through his involvement with the National

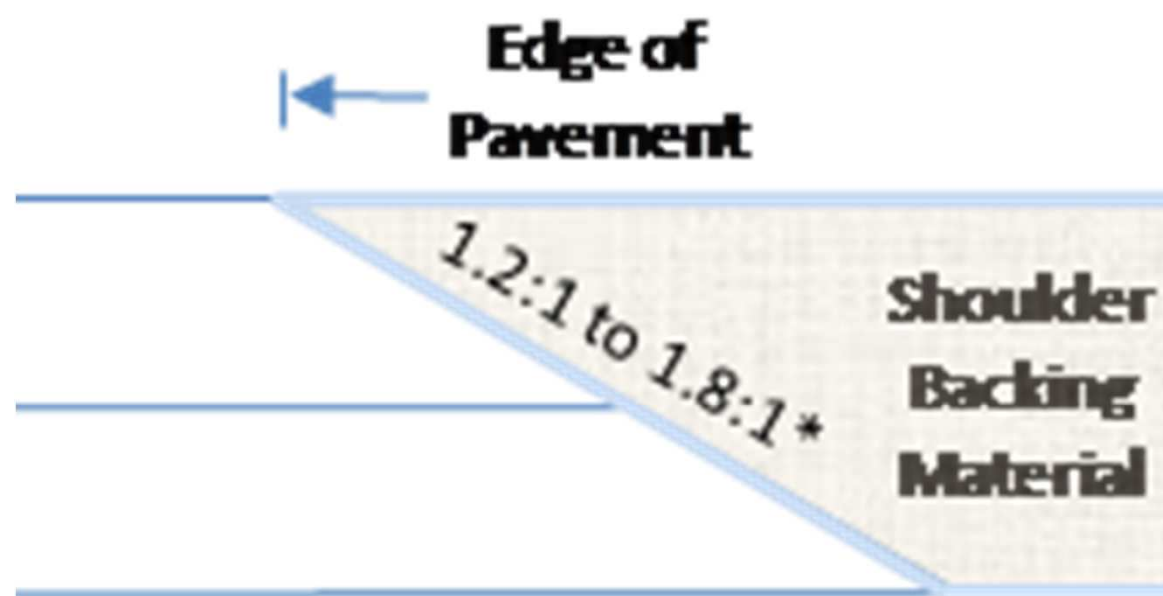


A group of officials from federal, state and local transportation agencies discuss the Safety Edge paving technique moments after watching a specially-equipped paving machine pass by. The group was among 36 people who attended an FHWA demonstration

ADA DRIVE

(Primary w/8000 ADT)

- Crush and shape ex. HMA and 2 Course HMA Resurface
- Safety Edge placed in both courses.



For $H \leq 5$ in. Configuration 1

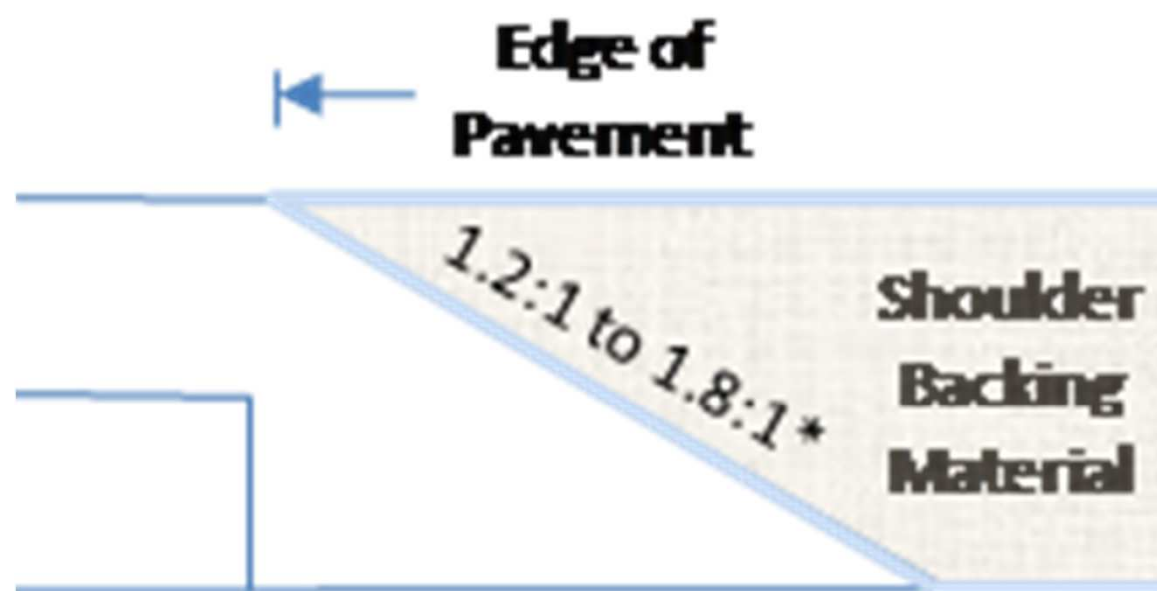
Ada Drive





18 MILE ROAD
(Primary w/ 1100 ADT)

- Single Course overlay
- Trenched existing shoulders to place safety edge



For $H \leq 5$ in. Configuration 2



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COST

Additional HMA

30 Tons per Mile/Side (3.5 inch Depth)

1 Mile Both Sides @ \$60/ton = \$3,600

Shoulder Trenching (if required)

Estimated Cost = \$2,000/mile

ANTICIPATED BENEFITS

- Accident Reduction
- Less concern of Edge Drop
- May reduce edge cracking



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